At the recent Consumer Electronics Show (CES)* in Las Vegas, wireless technology was pre-eminent. With over 150,000 attendees from 110 countries witnessing the introduction of thousands of new products and technologies from over 2500 exhibitors, CES lived up to its billing as the world's largest technology tradeshow.

Roy Szweda, Associate Editor

Wireless everywhere

Optimism was high for further increased sales in a bewildering range of innovative commercial as well as consumer wireless-based products and infrastructure. This proves how quickly technologies such as Bluetooth and Wi-Fi have matured. More is to come as Zigbee begins to make its presence felt.

Hands-free has become a watchword in the auto industry. New regulations have triggered a boom in sales of wireless solutions. Now it is also improving motorcycle safety. Cardo Systems Inc debuted its 'scala-rider Combo unit'. It provides motorcyclists with wireless comms capabilities even when used with standard, non-Bluetooth mobile phones. In-vehicle entertainment is also expanding, thanks to wireless. Several companies showed off Bluetooth interfaces to connect MP3 players to the car's stereo, and soon there will be Wi-Fi offerings for video too.

In this respect, Creative Technology's new Live! Wireless takes the webcam a step further. Using a Wi-Fi network, it enables remote viewing of home or office from any net-enabled PC or cell phone. There are many other actual and target applications for wireless systems, including home and business video security surveillance. Wireless keyboards expand the input possibilities for Bluetooth-enabled phones. Plus, there is the intriguing Wireless USB Extender, which allows any USB 2.0 peripheral to be powered remotely from a Mac without cables.

Also, Sony revealed its wireless-enabled camcorders. The DCS-SR100 is a hard disk drive-based unit with seamless PC connectivity that supports Sony's new centre-channel Bluetooth microphone for cinematic sound.

For budding robot engineers, National Instruments and the LEGO Group are jointly developing the software component to the next generation of LEGO MINDSTORMS robotics. It exploits newer technologies such as advanced optical sensors and Bluetooth for even more innovative amateur control systems.

If your aspirations are a little lower, there is the Motorola and Nikko Wireless Wheels toy car, remote-controlled by certain Motorola iDEN handsets. Based on Freescale Semiconductor's IEEE 802.15.4 standard wireless network technology, the MC13193 2.4 GHz RF chip is a low-voltage, low-power HCS08 microcontroller unit providing battery lifetimes of several years. A handset replaces traditional remote controls by operating multiple devices such as toys or robots with reliable two-way communications. As the company says, "Nikko's remote-control car is bringing wireless technology to a new level; cutting-edge wireless solutions will have a positive and fun impact in everyday lives".

Zigbee, the pretender to the wireless connectivity throne, is already being used in a variety of consumer and industrial applications, such as home automation and control, automatic meter reading and asset management. But even better things are in prospect, e.g. from Ember Corp, which develops tiny, low-power ZigBee systems for creating wireless sensing and control networks that automatically configure and heal themselves, and work for years on very little power. The Ember EM250 is a 802.15.4/ZigBee semiconductor system that integrates a programmable microprocessor, RF radio, network protocol stack and memory into a single-chip solution.

The ZigBee Alliance is getting ready to certify products. It is launching a range of test programmes for manufacturers who want to develop ZigBee-compatible devices. This certification process should give consumers confidence that ZigBee products from different companies are compatible. Products enabled with ZigBee technology from Freescale Semiconductor are coming to home improvement and consumer electronics stores via Hawking Technologies, whose HomeRemote System communicates wirelessly with local sensors and devices installed throughout the home.

To conclude with a classic demonstration of how well RF chips are permeating the market, bottles of Viagra are to get RFID tags. In a security test in the USA, Viagra manufacturer Pfizer is affixing RFID tags to all US shipments to beat the profusion of counterfeit pills — as many as five million were seized in 2005.

* See www.cesweb.org for news, keynote speech transcripts and audio podcasts.